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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,011	12/20/2005	Ashutosh Joshi	0-05-106	9060
7590 05/04/2009				
Kevin D McCarthy Roach Brown McCarthy & Gruber 1620 Liberty Building Buffalo, NY 14202				
EXAMINER				
WONG, EDNA				
ART UNIT		PAPER NUMBER		
1795				
MAIL DATE		DELIVERY MODE		
05/04/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/541,011

**Applicant(s)**

JOSHI ET AL.

**Examiner**

EDNA WONG

**Art Unit**

1795

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 4-6 and 8-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4-6 and 8-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- \_\_\_\_\_ Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- \_\_\_\_\_ Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 28, 2009 has been entered.

This is in response to the Amendment dated April 28, 2009. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

***Response to Arguments***

**Claim Rejections - 35 USC § 103**

Claims **1, 4-6 and 8-16** have been rejected under 35 U.S.C. 103(a) as being unpatentable over **CS 274995** ('995) in combination with **Parrish** (US Patent No. 6,793,903 B1) and **Jen et al.** ("Determination of Hydroxyl Radicals in an Advanced Oxidation Process with Salicylic Acid Trapping and Liquid Chromatography", *J. of Chrom. A*, Vol. 796 (1998), pp. 283-288).

The rejection of claims 1, 4-6 and 8-16 under 35 U.S.C. 103(a) as being unpatentable over CS 274995 ('995) in combination with Parrish and Jen et al. is as

applied in the Office Actions dated August 26, 2008 and January 29, 2009 and incorporated herein. The rejection has been maintained for the following reasons:

Applicants state that an average person skilled in the art would have known that the Fenton and photo-Fenton reactions work only with transition metals ions (from Fe, Cu, etc.). Therefore it is submitted that CS '955 does not teach nor suggest the use of an alkaline earth metal such as MgO as a catalyst.

In response, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Parrish teaches:

An example of the high temperature decomposition process is illustrated in FIG. 1. Prior to impinging a hydrogen peroxide solution 8 (containing hydrogen peroxide and water) onto a heated surface 18, the hydrogen peroxide solution 8 may be optionally heated to vaporize some of the water into steam 12. The hydrogen peroxide solution 8 may be pumped through a tube or nozzle 10. In this example, the hydrogen peroxide solution 8 is heated to ~140°C. If the hydrogen peroxide solution is heated, water in the heated hydrogen peroxide solution 8 evaporates in the form of steam 12 resulting in an enriched hydrogen peroxide solution 14. This enriched hydrogen peroxide solution 14 impinges on the heated surface 18 (preferably heated to 200°-500° C.) where oxidative free radicals, hydroxyl and hydroperoxyl, are produced. The decomposition of hydrogen peroxide occurring on the heated surface 18 results in rapid decomposition without increasing the risk of an explosion of the hydrogen peroxide solution 8 that is in storage prior to use. Preferably, the heated surface 18 contains a catalytic coating 20 composed of a variety of compounds including, but not limited to, **Fe(II), Fe(III) Cr(II), Cu(II), Pt black, Ag, or Pd. Additionally**, the decomposition of hydrogen peroxide may occur on a variety of catalytic coatings 20 **including oxide surfaces, such as metal oxides,**

**glass, quartz, Mo glass,  $Fe_{3-x}Mn_xO_4$  spinels,  $Fe_2O_3$  with Cu ferrite, MgO and  $Al_2O_3$ .**

The key element for the high temperature decomposition of hydrogen peroxide is contact with a heated surface 18, regardless of whether the surface has a catalytic coating 20 or not. Table 1 discloses a number of catalytic coatings 20 and the corresponding heated surface temperatures for decomposing hydrogen peroxide. Presently, iron oxide has given the highest degree of conversion (col. 3, lines 8-42).

Fe(II), Cu(II) and MgO are functionally equivalent catalysts. They would have possessed similar abilities when used. Thus, the substitution of one of these catalysts for another would have been well within one having ordinary skill in the art. There is no requirement that the motivation to make the combination be expressly articulated in one or more of the references. The teaching, suggestion or inference can be found not only in the references but also from knowledge generally available to one of ordinary skill in the art. *Ashland Oil v. Delta Resins* 227 USPQ 657 (CAFC 1985). The test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. *In re McLaughlin* 170 USPQ 209 (CCPA 19710; *In re Rosselet* 146 USPQ 183 (CCPA 1960). References are evaluated by what they collectively suggest to one versed in the art, rather than by their specific disclosures. *In re Simon* 174 USPQ 114 (CCPA 1972); *In re Richman* 165 USPQ 509, 514 (CCPA 1970).

Applicants state that a catalytic compound chosen randomly from the list of US '903 would not have given reasonable expectations of success if used in the CS '995 reaction.

In response, there is no evidence that the substitution of Fe(II) or Cu(II) with MgO

would have been unsuccessful because one having ordinary skill in the art would have expected that they would have possessed similar abilities due to their recognized equivalency in the prior art. Reading a list and selecting a known compound to meet known requirements is no more ingenious than selecting the last piece to put in the last opening in a jig-saw puzzle (MPEP § 2144.06).

Applicants state that the allegation of the Examiner that an average skilled person in the art would have chosen particularly MgO among the list of catalytic compounds of US '903, for use as a catalyst in the CS '905 reaction, is made with the benefit of hindsight that ignores the actual teachings of the references.

In response, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

### ***Response to Amendment***

#### ***Claim Rejections - 35 USC § 112***

Claims **1, 4-6 and 8-16** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention.

Claim 1

line 11, it appears that the "ambient temperature" is the same as the ambient temperature recited in claim 1, line 2. However, the claim language is unclear as to whether it is.

Subsequent mention of an element is to be modified by the definite article "the", "said" or "the said," thereby making the latter mention(s) of the element unequivocally referable to its earlier recitation.

Claim 8

lines 2-3, "the **initial** concentration of magnesium oxide is from 10 to 50 ppm" lacks antecedent basis.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EDNA WONG whose telephone number is (571) 272-1349. The examiner can normally be reached on Mon-Fri 7:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Edna Wong/  
Primary Examiner  
Art Unit 1795

EW  
April 30, 2009